LPIC-1 101-500 – Lesson 6

103.6 Modify process execution priorities

Process Priorities

- The Linux system allows us to set the priority of processes

- The priority values fro a process range from **-20** to **19**. Priority **-20** is the highest possible priority and **19** the lowest possible (even though its higher numerically)

- The default priority for newly created processes is **0**

- Priorities can be re-defined before or after the creation of a process

Show Priorities

- **$ ps -efl | less** # the **NI** field will display the priority for each process **(-l)**

- **$ ps -lu user** # the **NI** field will display the priority of each processes by user **user**

- **$ top** # the **NI** field will display the priority for each process

Run processes with different priority with `nice`

- **$ nice top** # **= nice -10, nice -n 10**. run top with priority **10** (default for nice). H **top** will have lower priority than **0** and thus will be "nicer" (hence nice)

- **# nice --10 find / > all-files.txt &** # **= nice -n -10**. increase the priority of the **find process at -10** and send process to background. The first dash is for the option and the second for the negative sign in -10

  *Note: only the **root** user has the right to set negative priorities*

Change the priority of running processes with `renice`

- **`$ renice 6 1755 1786`** `# change the` `priority of processes` **`1755`** `and` **`1786`** `to` **`6`**`.`

Note1: the first argument is mandatory and sets the priority number

Note2: the priority in renice is an argument, not an option! So we don't need dash, unless we are setting a negative priority

*Note3: in case priority exceeds number **19** then it is set to the lowest priority which is **19***

Change the priority of running processes with `renice`

- # **renice -15 -u user** # increase the priority of all processes owned by **user**. Only the **root** user has the right to set negative priorities.

Note1: the dash (-) symbol is the negative sign not option dash

Note2: when the absolute value of a negative priority is greater than -20, e.g., -35, the process will assume a priority of -20

Change the priority of running processes with `renice`

Options:

- **-u** # set the user

- **-p** # set the **PID**. Mandatory only if followed by **-u**

- **# renice 12 1548 -u user1 user2 -p 1289** # change priority to **12** for all the processes of **user2** and PIDs **1548** and **1289**
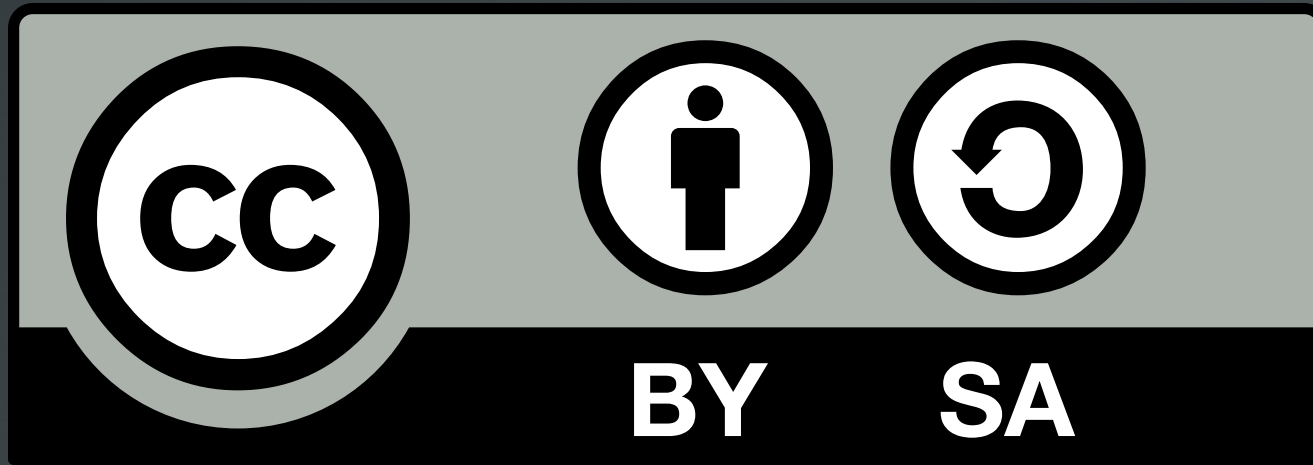
Change priorities from `top`

- **$ top**   # find a PID that was run by you

- r   # Press "r" for renice

- <PID> # set the PID of the chosen process

- <PRI> # Set a priority (0 – 19 for normal users, -20 – (+)19 for root)

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